WE CLAIM:

1. A medical device designed to be at least partially inserted into a patient comprising:

a body member that includes on a portion thereof a coating of a polyalkylene oxide that is cross-linked with a polyalkylene oxide derivative to form a coating that provides a lubricous surface.

2. The medical device of Claim 1 wherein the coating includes water.

3. The medical device of Claim 1 wherein the coating includes a functional group that provides a modified surface property to the coating.

4. The medical device of Claim 1 wherein the device is a catheter.

5. The medical device of Claim 1 wherein the device is a wound drain.

6. The medical device of Claim 1 wherein the device is a guide wire.

7. The medical device of Claim 1 wherein the device is a stent.

8. The medical device of Claim 1 wherein the device is a chest tube.

9. The medical device of Claim 1 wherein the portion thereof is constructed from silicone.

10. The medical device of Claim 1 wherein the portion thereof is constructed from polyvinyl chloride.

11. An implantable biological tissue comprising:

a biological tissue and a coating thereon including a multilayer surface including a layer having a high molecular weight polyalkylene oxide derivative and a layer having a biopolymer.

12. The implantable biological tissue of Claim 11 wherein the tissue is a vascular graft.

13. The implantable biological tissue of Claim 11 wherein the tissue is a heart valve tissue.

14. The implantable biological tissue of Claim 11 wherein the tissue is a synthetic membrane.

15. A bioprosthetic device comprising:

a biological tissue coated at least in part with a coating including a polyalkylene oxide derivative that is cross-linked with a polyalkylene oxide derivative.

16. The bioprosthetic device of Claim 15 wherein the coating includes a protein that is designed to bind to a specific agent.

17. A method of providing medical devices comprising the steps of:

providing a medical device having a body; and

coating at least a portion of the body with a coating including a polyalkylene oxide derivative cross-linked with polyalkylene oxide derivative to modify the surface properties of the portion of the body.

18. The method of Claim 17 including the step of adding a functional group to the coating.

19. The method of Claim 17 including the step of providing a bioprosthetic device as the medical device.

20. The method of Claim 17 including the step of providing a catheter as the medical device.

21. The method of Claim 17 including the step of providing a wound drain as the medical device.

22. The method of Claim 17 including the step of providing a chest tube as the medical device.

23. The method of Claim 17 including the step of providing implantable biological tissue as the medical device.

24. The method of Claim 17 including the step of providing a guide wire as the medical device.

25. A medical device comprising:

a body member; and

a coating thereon comprising an irradiated condensation product of a high molecular weight tetraacrylatepolyalkylene oxide.

26. The medical device of Claim 25 wherein said electrophilically active, high molecular weight polyalkylene oxide compound has the general structure Y-PEO-R-PEO-Y wherein Y is a reactive moiety selected from the group consisting of oxycarbonylimidazole; tresyl-, tosyl-, N-hydroxysuccinimidyl-, and p-nitrophenyl-activated esters; acrylates; glycidyl ethers; and aldehydes, wherein R is a spacer selected from compounds containing carbon, nitrogen, oxygen, and/or sulfur atoms, and wherein PEO is a high molecular weight polyalkylene oxide.

27. The medical device of Claim 25 wherein said spacer R is bisphenol A or bisphenol B.

28. A method of coating a surface of a medical device with a crosslinked copolymer comprising:

applying a first polymer comprising an electrophilically active, high molecular weight polyalkylene oxide compound to a surface of a medical device;

drying said first polymer onto said surface;

applying a second high molecular weight polyalkylene derivatives to the surface; and

incubating at a temperature of from about 5 degrees Centigrade to about 200 degrees Centigrade for a time sufficient to obtain substantial completion of crosslinking.

29. An implantable biological tissue having improved calcification mitigation properties, comprising:

a biological tissue treated with one or more high molecular weight polyalkylene oxide derivatives.

30. The implantable biological tissue of claim 29, wherein the biological

tissue is pre-treated with glutaraldehyde.

31. The implantable biological tissue of claim 30, wherein the pre-treatment includes cross-linking with glutaraldehyde.

32. The implantable biological tissue of claim 29, wherein the biological tissue is allograft tissue.

33. The implantable biological tissue of claim 29, wherein the biological tissue is xenograft tissue.

34. The implantable biological tissue of claim 29, wherein the biological tissue is selected from the group consisting of:

bovine pericardial tissue;
porcine tissue; and
equine tissue.

35. The implantable biological tissue of claim 31, wherein the treatment with a high molecular weight polyalkylene oxide comprises treatment with an Imz-PEO solution.

36. The implantable biological tissue of claim 35, wherein the treatment with an Imz-PEO solution is followed by a reaction with NH_2-PEO.

37. The implantable biological tissue of claim 36, further including treating the tissue with a biologically active recognition sequence, peptide, or compound during the reaction with NH_2-PEO.

38. The implantable biological tissue of claim 29, wherein the biological tissue is fresh and the treatment with a high molecular weight polyalkylene oxide comprises treatment with an Imz-PEO solution.

39. The implantable biological tissue of claim 37, wherein the treatment with an Imz-PEO solution is followed by a reaction with NH_2-PEO.

40. A method for improving the calcification mitigation properties of an

implantable biological tissue, comprising the step of:

treating a biological tissue with one or more high molecular weight polyalkylene oxide derivatives.

41. The method of claim 40, wherein the biological tissue is pre-treated with glutaraldehyde.

42. The method of claim 40, wherein the pre-treatment includes cross-linking with glutaraldehyde.

43. The method of claim 40, wherein the biological tissue is allograft tissue.

44. The method of claim 40, wherein the biological tissue is xenograft tissue.

45. The method of claim 40, wherein the biological tissue is selected from the group consisting of:

bovine pericardial tissue;

porcine tissue; and

equine tissue.

46. The method of claim 40, wherein the treatment with an Imz-PEO solution is followed by a reaction with NH_2-PEO.

47. The method of claim 46, further including treating the tissue with a biologically active recognition sequence, peptide, or compound during the reaction with NH_2-PEO.

48. The method of claim 40, wherein the biological tissue is fresh and the treatment with a high molecular weight polyalkylene oxide comprises treatment with an Imz-PEO solution.

49. The method of claim 48, wherein the treatment with an Imz-PEO solution is followed by a reaction with NH_2-PEO.